

What is claimed is:

1. A hole-punching processor for forming a punched-hole on a sheet residing in a conveying path for conveying said sheet through said hole-punching processor, comprising:

a hole-punching device being movable in a direction perpendicular to a conveyance direction of said sheet; and

a sheet-edge detector to detect a side-edge of said sheet in a direction parallel to said conveyance direction of said sheet;

wherein said hole-punching device moves with said sheet-edge detector to a center of said sheet, based on positional information of said side-edge detected by said sheet-edge detector, to punch a hole in said sheet.

2. The hole-punching processor of claim 1,

wherein a plurality of sheet-edge detectors, each of which corresponds to each of sheet sizes to be processed by said hole-punching processor, are provided.

3. The hole-punching processor of claim 1,

wherein said sheet-edge detector is disposed in a vicinity of either an inner or an outer portion of said side-

edge of said sheet, and, after a leading edge of said sheet is detected, said hole-punching device moves in either an inner or an outer direction perpendicular to said conveyance direction of said sheet so that said sheet-edge detector detects a position of said side-edge of said sheet.

4. The hole-punching processor of claim 3,

wherein said sheet-edge detector also serves as a detector for detecting said leading-edge of said sheet.

5. The hole-punching processor of claim 4,

wherein a plurality of sheet-edge detectors, each of which corresponds to each of sheet sizes to be processed by said hole-punching processor, are provided, and one of said sheet-edge detectors, which is disposed at a position nearest to a center of said sheet, detects said leading-edge of said sheet.

6. The hole-punching processor of claim 1, further comprising:

a trailing-edge detector to detect a trailing-edge of said sheet being conveyed;

wherein an action for conveying said sheet is temporarily deactivated, when said sheet has moved for a predetermined distance since said trailing-edge detector detected said trailing-edge of said sheet.

7. The hole-punching processor of claim 6,

wherein said sheet-edge detector also serves as said trailing-edge detector.

8. The hole-punching processor of claim 7,

wherein a plurality of sheet-edge detectors, each of which corresponds to each of sheet sizes to be processed by said hole-punching processor, are provided, and one of said sheet-edge detectors, which is disposed at a position nearest to a center of said sheet, detects said trailing-edge of said sheet.

9. An image-forming apparatus, comprising:

an image-forming section to form an image on a sheet;

an ejecting section to eject said sheet on which said image is formed; and

a hole-punching processor to form a punched-hole on said sheet while conveying said sheet through said hole-punching processor;

wherein said hole-punching processor comprises:

a hole-punching device being movable in a direction perpendicular to a conveyance direction of said sheet; and

a sheet-edge detector to detect a side-edge of said sheet in a direction parallel to said conveyance direction of said sheet; and

wherein said hole-punching device moves with said sheet-edge detector to a center of said sheet, based on positional information of said side-edge detected by said sheet-edge detector, to punch a hole in said sheet.

10. A hole-punching processor of claim 1,

wherein, in case of a non-punching mode in which a hole-punching action of said hole-punching device is deactivated, said sheet-edge detector is moved at a standby position located at either an inner or an outer position of said side-edge of said sheet so as to pass said sheet without punching.

11. The hole-punching processor of claim 10,

wherein said hole-punching device moves with said sheet-edge detector.

12. The hole-punching processor of claim 10,

wherein a plurality of sheet-edge detectors, each of which corresponds to each of sheet sizes to be processed by said hole-punching processor, are provided.

13. The hole-punching processor of claim 10,

wherein said sheet-edge detectors comprises either a reflection-type or a transmission-type photo-sensor.

14. An image-forming apparatus, comprising:

an image-forming section to form an image on a sheet;
an ejecting section to eject said sheet on which said image is formed; and

a hole-punching processor to form a punched-hole on said sheet while conveying said sheet through said hole-punching processor;

wherein said hole-punching processor comprises:

a hole-punching device being movable in a direction perpendicular to a conveyance direction of said sheet; and

a sheet-edge detector, being movable in a direction perpendicular to said conveyance direction of said sheet, to detect a side-edge of said sheet in a direction parallel to said conveyance direction of said sheet; and

wherein said hole-punching device moves to a center of said side-edge, based on positional information of said side-edge detected by said sheet-edge detector, to punch a hole in said sheet; and

wherein, in case of a non-punching mode in which a hole-punching action of said hole-punching device is deactivated, said sheet-edge detector is moved at a standby position located at either an inner or an outer position of said side-edge of said sheet so as to pass said sheet without punching.

15. A hole-punching processor for forming a punched-hole on a sheet conveyed in a conveyance path from an image-forming apparatus, after a skew of said sheet is corrected by a registration roller, so as to eject said sheet from a ejecting section, comprising:

a first conveyance path, being a short conveyance path and located downstream said registration roller, to directly convey said sheet to said ejecting section;

a second conveyance path, being a long conveyance path and located downstream said registration roller, to convey said sheet in detour to said ejecting section; and

a conveyance path switching section to selectively switch said conveyance path of said sheet to either said first conveyance path or said second conveyance path.

16. A hole-punching processor of claim 15,

wherein said sheet is conveyed through said first conveyance path, switched by said conveyance path switching section, when a length of said sheet in parallel to a conveyance direction of said sheet is a short size, while said sheet is conveyed through said second conveyance path, switched by said conveyance path switching section, when a length of said sheet in parallel to a conveyance direction of said sheet is a long size.

17. A hole-punching processor of claim 15,

wherein, in case of a non-punching mode in which an action for forming said punched-hole is deactivated, said

conveyance path switching section switches said conveyance path of said sheet to said first conveyance path so that said sheet is conveyed through said first conveyance path without correcting said skew of said sheet.

18. A hole-punching processor of claim 15, further comprising:

a conveyance roller, disposed at said second conveyance path and driven by a first driving-force transmission section, to convey said sheet;

an ejection roller, disposed at an outlet of both said first conveyance path and said second conveyance path, and driven by a second driving-force transmission section, to eject said sheet; and

one-way rotating clutches to transmit a rotational driving-force in one rotational direction;

wherein said one-way rotating clutches are incorporated in both said first driving-force transmission section and said second driving-force transmission section.

19. An image-forming apparatus, comprising:

an image-forming section to form an image on a sheet;

a first ejecting section to eject said sheet on which said image is formed; and

a hole-punching processor to form a punched-hole on said sheet conveyed in a conveyance path from said first ejecting section, after a skew of said sheet is corrected by a registration roller, so as to eject said sheet from a second ejecting section;

wherein said hole-punching processor comprises:

a first conveyance path, being a short conveyance path and located downstream said registration roller, to directly convey said sheet to said second ejecting section;

a second conveyance path, being a long conveyance path and located downstream said registration roller, to convey said sheet in detour to said second ejecting section; and

a conveyance path switching section to selectively switch said conveyance path of said sheet to either said first conveyance path or said second conveyance path.